

## **APPENDIX C**

### **Cost Estimate Summary**

# **Montgomery Dam and Reservoir**

<b>UPPER SAN JOAQUIN RIVER BASIN STORAGE INVESTIGATION</b>	
<b>Cost Estimate</b>	
<b>Montgomery Dam and Reservoir</b>	Sheet 1 of 4
<b>Large Dam Option (crest el. 336)</b>	
Based on 1960 and 1996 cost estimates. Unit costs updated by index to 2002 . Land costs based upon current unit prices.	
<b>FIRST COST ITEMS</b>	<b>Cost (2002 dollars)</b>
<b>DAMS</b>	
Main Dam & Saddle Dams (Earthfill)	\$ 35,548,000
Spillway	\$ 745,000
Outlet Works	\$ 15,594,000
<b>SUBTOTAL</b>	<b>\$ 51,887,000</b>
<b>CONVEYANCE FACILITIES</b>	
Reservoir Supply Pipeline	\$ 19,233,000
Pumping Plant	\$ 35,334,000
Discharge Pipeline	\$ 20,515,000
Main Canal Pipeline	\$ 6,411,000
<b>SUBTOTAL</b>	<b>\$ 81,493,000</b>
<b>TOTAL LISTED ITEMS (rounded)</b>	<b>\$ 133,400,000</b>
<b>UNLISTED ITEMS (estimated at 15%; rounded)</b>	<b>\$ 20,000,000</b>
<b>TOTAL CONSTRUCTION ITEMS (rounded)</b>	<b>\$ 153,000,000</b>
<b>CONTINGENCIES ON CONSTRUCTION (estimated at 25%; rounded)</b>	<b>\$ 38,000,000</b>
<b>TOTAL CONSTRUCTION COST</b>	<b>\$ 191,000,000</b>
<b>MITIGATION (estimated at 5%; rounded)</b>	<b>\$ 10,000,000</b>
<b>TOTAL FIELD COSTS</b>	<b>\$ 201,000,000</b>
<b>Investigations, Design &amp; Construction Mngmt (est. 15%; rounded)</b>	<b>\$ 30,000,000</b>
<b>LAND (rounded)</b>	<b>\$ 13,000,000</b>
<b>TOTAL FIRST COST</b>	<b>\$ 244,000,000</b>

Estimated First Cost			Sheet 2 of 4							25-Feb-03	
Montgomery Reservoir: Dam Crest Elevation 336 ft											
ITEM DESCRIPTION	Quantity	Unit	USBR Index		Unit Cost	USBR Index		Unit Cost	Unit Cost	ITEM COST	
			Jul.60	Apr.02		Jul.60	Oct.96				Apr.02
<b>I. LAND AND RIGHTS</b>											
Reservoir Rights-of-Way (8,050 Ac x 1.32 Buffer Factor)	10,626	AC							\$1,200	\$12,751,000	
<b>SUBTOTAL LAND AND RIGHTS</b>										<b>\$12,751,000</b>	
<b>IV. DAM AND DIKES</b>											
Diversion of Water and Unwatering Foundations	JOB	LS	43	180	\$20,000				\$83,721	\$84,000	
Excavation for Dam Foundation	1,757,000	CY				212	237	\$3.23	\$3.61	\$6,344,000	
Excavation, Earthfill, in Borrow Pits and Haul to Dam	1,575,000	CY	43	180	\$0.65				\$2.72	\$4,285,000	
Excavation, Misc Fill, in Borrow Pits and Haul to Dam	241,000	CY	43	180	\$0.50				\$2.09	\$504,000	
Excav., Sand and Gravel, in Borrow Pits and Haul to Dam	2,228,000	CY	43	180	\$0.70				\$2.93	\$6,529,000	
Earthfill	1,575,000	CY	43	180	\$0.16				\$0.67	\$1,055,000	
Miscellaneous Fill	1,998,000	CY	43	180	\$0.15				\$0.63	\$1,255,000	
Sand and Gravel Fill	1,307,000	CY	43	180	\$0.14				\$0.59	\$766,000	
Furnish and Place Riprap	291,000	CY				212	237	\$31.64	\$35.37	\$10,293,000	
Furnish and Place Rock Surfacing on Downstream Slope	115,000	CY	43	180	\$2.00				\$8.37	\$963,000	
Chimney blanket	921,000	CY							\$0.70	\$645,000	
Total Fill	6,207,000	CY									
Grout curtain drilling	90,400	ft.							\$20.00	\$1,808,000	
Grout	67,800	bags							\$15.00	\$1,017,000	
<b>SUBTOTAL MONTGOMERY DAM AND DIKES</b>										<b>\$35,548,000</b>	
<b>V. SPILLWAY</b>											
Excavation, All Classes, Open Cut	27,000	CY				212	237	\$3.38	\$3.78	\$102,000	
Furnish and Place Riprap	1,150	CY				212	237	\$31.64	\$35.37	\$41,000	
Special Compaction	570	CY	39	210	\$3.50				\$18.85	\$11,000	
Pervious Backfill Around Structures	5,150	CY				212	237	\$8.17	\$9.13	\$47,000	
Concrete in Inlet Structure	137	CY				212	237	\$365.00	\$408.04	\$56,000	
Concrete in Conduit	208	CY				212	237	\$366.00	\$409.16	\$85,000	
Concrete in Chute and Stilling Basin	835	CY				212	237	\$365.00	\$408.04	\$341,000	
Concrete in 12-inch Exit Channel Lining	255	Cy				212	237	\$80.00	\$89.43	\$23,000	
Concrete in 4-inch Canal Lining	205	CY				212	237	\$80.00	\$89.43	\$18,000	
Rubber Waterstop , 6-inch	510	LF	39	210	\$3.50				\$18.85	\$10,000	
Chain-link Fence	350	LF	39	210	\$4.00				\$21.54	\$8,000	
Air Inlet Piping	1,100	LB	39	210	\$0.50				\$2.69	\$3,000	
<b>SUBTOTAL SPILLWAY</b>										<b>\$745,000</b>	

Estimated First Cost			Sheet 3 of 4						25-Feb-03	
Montgomery Reservoir: Dam Crest Elevation 336 ft										
ITEM DESCRIPTION	Quantity	Unit	USBR Index		Unit Cost	USBR Index		Unit Cost	Unit Cost	ITEM COST
			Jul.60	Apr.02	Jul.60	Oct.96	Apr.02	Oct.96	Apr.02	Apr.02
<b>VI. OUTLET WORKS</b>										
Excavation, All Classes, Open Cut	286,000	CY							\$6.76	\$1,933,000
Furnish and Place Riprap	5,350	CY				212	237	\$31.64	\$35.37	\$169,000
Pervious Backfill Around Structures	23,000	CY				212	237	\$18.99	\$21.23	\$437,000
Special Compaction	3,780	CY	39	210	\$3.50				\$18.85	\$71,000
Concrete in Inlet Lining	600	CY				212	237	\$321.00	\$358.85	\$215,000
Concrete in Intake Structure	3,200	CY				212	237	\$340.00	\$380.09	\$1,216,000
Concrete in Upstream Conduit	2,730	CY				212	237	\$321.00	\$358.85	\$980,000
Concrete in Downstream Conduit	3,680	CY				212	237	\$321.00	\$358.85	\$1,321,000
Concrete in Access House	130	CY				212	237	\$340.00	\$380.09	\$49,000
Concrete in Anchor Blocks	4,600	CY				212	237	\$256.00	\$286.19	\$1,316,000
Concrete in Chute and Stilling Basin	3,100	CY				212	237	\$365.00	\$408.04	\$1,265,000
Concrete in Bridge Deck	123	CY				212	237	\$424.00	\$474.00	\$58,000
Concrete in Bridge Piers	800	CY				212	237	\$363.00	\$405.81	\$325,000
6-inch Soil Pi Drain	980	IF	37	233	\$4.20				\$26.45	\$26,000
Type "B" Rubber Waterstops	1,910	LF	39	210	\$3.50				\$18.85	\$36,000
Trashracks	225,000	LB				212	237	\$3.63	\$4.06	\$913,000
Stop-log Seats and Guides at Intake Structure	22,000	LB				212	237	\$3.63	\$4.06	\$89,000
Stop-logs at Intake Structure	50,000	LB	37	233	\$0.23				\$1.45	\$72,000
17-ft b 22.51-ft Fixed Wheel Gate	124,000	LB	37	233	\$0.70				\$4.41	\$547,000
Fixed Wheel Gate Frames and Guides	56,300	LB	37	233	\$0.50				\$3.15	\$177,000
Fixed Wheel Gate Hoist	30,000	LB	37	233	\$1.02				\$6.42	\$193,000
Fixed Wheel Gate Control	2,500	LB	37	233	\$2.15				\$13.54	\$34,000
Miscellaneous Metalwork	2,000	LB				212	237	\$3.63	\$4.06	\$8,000
Reservoir Level Gage, Floatwell, and Piping	8,000	LB	37	233	\$1.00				\$6.30	\$50,000
Steel Girder Bridge Metalwork at Intake Structure	60,000	LB	37	233	\$0.26				\$1.64	\$98,000
Chain-link Fence	1,220	LF	39	210	\$4.00				\$21.54	\$26,000
17-ft Diameter Steel Pipe and Liner	945,000	LB	37	233	\$0.35				\$2.20	\$2,083,000
9.5-ft Diameter Steel Outlet Pi (2 Total)	115,000	LB	37	233	\$0.30				\$1.89	\$217,000
75-ft b 9-ft Outlet Gates (4 Total)	440,000	LB	37	233	\$0.57				\$3.59	\$1,579,000
Outlet Gate Controls	3,500	LB	37	233	\$2.15				\$13.54	\$47,000
St to Seats and Guides at Control Structure	6,000	LB	37	233	\$0.37				\$2.33	\$14,000
Stop-logs at Control Structure	14,000	LB	37	233	\$0.23				\$1.45	\$20,000
Gravel Surfacing (4-inch)	400	CY	37	233	\$4.00				\$25.19	\$10,000
<b>SUBTOTAL OUTLET WORKS</b>										<b>\$15,594,000</b>

<b>Estimated First Cost</b>		<b>Sheet 4 of 4</b>						<b>25-Feb-03</b>		
<b>Montgomery Reservoir: Dam Crest Elevation 336 ft</b>										
ITEM DESCRIPTION	Quantity	Unit	USBR Index		Unit Cost	USBR Index		Unit Cost	Unit Cost	ITEM COST
			Jul.60	Apr.02	Jul.60	Oct.96	Apr.02	Oct.96	Apr.02	Apr.02
<b>VI. CONVEYANCE FACILITIES</b>										
Reservoir Supply Pipeline	JOB	LS	202	259	\$15,000,000				\$19,232,673	\$19,233,000
Pumping Plant	JOB	LS				215	237	\$32,054,400	\$35,334,385	\$35,334,000
Discharge Pipeline	JOB	LS	202	259	\$16,000,000				\$20,514,851	\$20,515,000
Main Canal Pipeline	JOB	LS	202	259	\$5,000,000				\$6,410,891	\$6,411,000
<b>SUBTOTAL CONVEYANCE FACILITIES</b>										<b>\$81,493,000</b>

<b>UPPER SAN JOAQUIN RIVER BASIN STORAGE INVESTIGATION</b>	
<b>Cost Estimate</b>	
<b>Montgomery Dam and Reservoir</b>	Sheet 1 of 3
<b>Mid Sized Dam Option (crest el. 321)</b>	
Based on 1960 and 1996 cost estimates. Unit costs updated by index to 2002 . Land costs based upon current unit prices.	
<b>FIRST COST ITEMS</b>	Cost (2002 dollars)
<b>DAMS</b>	
Main Dam & Saddle Dams (Earthfill)	\$ 15,817,000
Spillway	\$ 745,000
Outlet Works	\$ 15,594,000
<b>SUBTOTAL</b>	<b>\$ 32,156,000</b>
<b>CONVEYANCE FACILITIES</b>	
Reservoir Supply Pipeline	\$ 19,233,000
Pumping Plant	\$ 35,334,000
Discharge Pipeline	\$ 20,515,000
Main Canal Pipeline	\$ 6,411,000
<b>SUBTOTAL</b>	<b>\$ 81,493,000</b>
<b>TOTAL LISTED ITEMS (rounded)</b>	<b>\$ 113,600,000</b>
<b>UNLISTED ITEMS (estimated at 15%; rounded)</b>	<b>\$ 17,000,000</b>
<b>TOTAL CONSTRUCTION ITEMS (rounded)</b>	<b>\$ 131,000,000</b>
<b>CONTINGENCIES ON CONSTRUCTION (estimated at 25%; rounded)</b>	<b>\$ 33,000,000</b>
<b>TOTAL CONSTRUCTION COST</b>	<b>\$ 164,000,000</b>
<b>MITIGATION (estimated at 5%; rounded)</b>	<b>\$ 8,000,000</b>
<b>TOTAL FIELD COSTS</b>	<b>\$ 172,000,000</b>
<b>Investigations, Design &amp; Construction Mngmt (est. 15%; rounded)</b>	<b>\$ 26,000,000</b>
<b>LAND (rounded)</b>	<b>\$ 9,000,000</b>
<b>TOTAL FIRST COST</b>	<b>\$ 207,000,000</b>

<b>Estimated First Cost</b>			<b>Sheet 2 of 3</b>					<b>25-Feb-03</b>			
<b>Montgomery Reservoir: Dam Crest Elevation 321 ft</b>											
DESCRIPTION	Quantity	Unit	USBR Index		Unit Cost		USBR Index		Unit Cost		ITEM COST
			Jul.60	Apr.02	Jul.60	Oct.96	Apr.02	Oct.96	Apr.02	Apr.02	
<b>I. LAND AND RIGHTS</b>											
Reservoir Rights-of-Way (5,930 Ac x 1.32 Buffer Factor)	7,828	AC								\$1,200	\$9,394,000
<b>SUBTOTAL LAND AND RIGHTS</b>										<b>\$9,394,000</b>	
<b>IV. DAM AND DIKES</b>											
Diversion of Water and Unwatering Foundations	JOB	LS	43	180	\$20,000					\$83,721	\$84,000
Excavation for Dam Foundation	869,000	CY				212	237	\$3.23	\$3.61		\$3,138,000
Excavation, Earthfill, in Borrow Pits and Haul to Dam	724,000	CY	43	180	\$0.65				\$2.72		\$1,970,000
Excavation, Misc Fill, in Borrow Pits and Haul to Dam	77,000	CY	43	180	\$0.50				\$2.09		\$161,000
Excav., Sand and Gravel, in Borrow Pits and Haul to Dam	1,024,000	CY	43	180	\$0.70				\$2.93		\$3,001,000
Earthfill	724,000	CY	43	180	\$0.16				\$0.67		\$485,000
Miscellaneous Fill	946,000	CY	43	180	\$0.15				\$0.63		\$594,000
Sand and Gravel Fill	617,000	CY	43	180	\$0.14				\$0.59		\$362,000
Furnish and Place Riprap	148,000	CY				212	237	\$31.64	\$35.37		\$5,235,000
Furnish and Place Rock Surfacing on Downstream Slope	60,000	CY	43	180	\$2.00				\$8.37		\$502,000
Chimney blanket	407,000	CY							\$0.70		\$285,000
Total Fill	2,902,000	CY									
Grout curtain drilling	64,720	ft.							\$20.00		\$1,294,000
Grout	48,540	bags							\$15.00		\$728,000
<b>Subtotal, Dam Costs</b>										<b>\$15,817,000</b>	
<b>V. SPILLWAY</b>											
Excavation, All Classes, Open Cut	27,000	CY				212	237	\$3.38	\$3.78		\$102,000
Furnish and Place Riprap	1,150	CY				212	237	\$31.64	\$35.37		\$41,000
Special Compaction	570	CY	39	210	\$3.50				\$18.85		\$11,000
Pervious Backfill Around Structures	5,150	CY				212	237	\$8.17	\$9.13		\$47,000
Concrete in Inlet Structure	137	CY				212	237	\$365.00	\$408.04		\$56,000
Concrete in Conduit	208	CY				212	237	\$366.00	\$409.16		\$85,000
Concrete in Chute and Stilling Basin	835	CY				212	237	\$365.00	\$408.04		\$341,000
Concrete in 12-inch Exit Channel Lining	255	Cy				212	237	\$80.00	\$89.43		\$23,000
Concrete in 4-inch Canal Lining	205	CY				212	237	\$80.00	\$89.43		\$18,000
Rubber Waterstop , 6-inch	510	LF	39	210	\$3.50				\$18.85		\$10,000
Chain-link Fence	350	LF	39	210	\$4.00				\$21.54		\$8,000
Air Inlet Piping	1,100	LB	39	210	\$0.50				\$2.69		\$3,000
<b>SUBTOTAL SPILLWAY</b>										<b>\$745,000</b>	

<b>Estimated First Cost</b>		<b>Sheet 3 of 3</b>							<b>25-Feb-03</b>	
<b>Montgomery Reservoir: Dam Crest Elevation 321 ft</b>										
DESCRIPTION	Quantity	Unit	USBR Index		Unit Cost	USBR Index		Unit Cost	Unit Cost	ITEM COST
			Jul.60	Apr.02	Jul.60	Oct.96	Apr.02	Oct.96	Apr.02	Apr.02
<b>VI. OUTLET WORKS</b>										
Excavation, All Classes, Open Cut	286,000	CY							\$6.76	\$1,933,000
Furnish and Place Riprap	5,350	CY				212	237	\$31.64	\$35.37	\$169,000
Pervious Backfill Around Structures	23,000	CY				212	237	\$18.99	\$21.23	\$437,000
Special Compaction	3,780	CY	39	210	\$3.50				\$18.85	\$71,000
Concrete in Inlet Lining	600	CY				212	237	\$321.00	\$358.85	\$215,000
Concrete in Intake Structure	3,200	CY				212	237	\$340.00	\$380.09	\$1,216,000
Concrete in Upstream Conduit	2,730	CY				212	237	\$321.00	\$358.85	\$980,000
Concrete in Downstream Conduit	3,680	CY				212	237	\$321.00	\$358.85	\$1,321,000
Concrete in Access House	130	CY				212	237	\$340.00	\$380.09	\$49,000
Concrete in Anchor Blocks	4,600	CY				212	237	\$256.00	\$286.19	\$1,316,000
Concrete in Chute and Stilling Basin	3,100	CY				212	237	\$365.00	\$408.04	\$1,265,000
Concrete in Bridge Deck	123	CY				212	237	\$424.00	\$474.00	\$58,000
Concrete in Bridge Piers	800	CY				212	237	\$363.00	\$405.81	\$325,000
6-inch Soil Pi Drain	980	IF	37	233	\$4.20				\$26.45	\$26,000
Type "B" Rubber Waterstops	1,910	LF	39	210	\$3.50				\$18.85	\$36,000
Trashracks	225,000	LB				212	237	\$3.63	\$4.06	\$913,000
Stop-log Seats and Guides at Intake Structure	22,000	LB				212	237	\$3.63	\$4.06	\$89,000
Stop-logs at Intake Structure	50,000	LB	37	233	\$0.23				\$1.45	\$72,000
17-ft b 22.51-ft Fixed Wheel Gate	124,000	LB	37	233	\$0.70				\$4.41	\$547,000
Fixed Wheel Gate Frames and Guides	56,300	LB	37	233	\$0.50				\$3.15	\$177,000
Fixed Wheel Gate Hoist	30,000	LB	37	233	\$1.02				\$6.42	\$193,000
Fixed Wheel Gate Control	2,500	LB	37	233	\$2.15				\$13.54	\$34,000
Miscellaneous Metalwork	2,000	LB				212	237	\$3.63	\$4.06	\$8,000
Reservoir Level Gage, Floatwell, and Piping	8,000	LB	37	233	\$1.00				\$6.30	\$50,000
Steel Girder Bridge Metalwork at Intake Structure	60,000	LB	37	233	\$0.26				\$1.64	\$98,000
Chain-link Fence	1,220	LF	39	210	\$4.00				\$21.54	\$26,000
17-ft Diameter Steel Pipe and Liner	945,000	LB	37	233	\$0.35				\$2.20	\$2,083,000
9.5-ft Diameter Steel Outlet Pi (2 Total)	115,000	LB	37	233	\$0.30				\$1.89	\$217,000
75-ft b 9-ft Outlet Gates (4 Total)	440,000	LB	37	233	\$0.57				\$3.59	\$1,579,000
Outlet Gate Controls	3,500	LB	37	233	\$2.15				\$13.54	\$47,000
St to Seats and Guides at Control Structure	6,000	LB	37	233	\$0.37				\$2.33	\$14,000
Stop-logs at Control Structure	14,000	LB	37	233	\$0.23				\$1.45	\$20,000
Gravel Surfacing (4-inch)	400	CY	37	233	\$4.00				\$25.19	\$10,000
<b>SUBTOTAL OUTLET WORKS</b>										<b>\$15,594,000</b>
<b>VI. CONVEYANCE FACILITIES</b>										
Reservoir Supply Pipeline	JOB	LS	202	259	\$15,000,000				\$19,232,673	\$19,233,000
Pumping Plant	JOB	LS				215	237	\$32,054,400	\$35,334,385	\$35,334,000
Discharge Pipeline	JOB	LS	202	259	\$16,000,000				\$20,514,851	\$20,515,000
Main Canal Pipeline	JOB	LS	202	259	\$5,000,000				\$6,410,891	\$6,411,000
<b>SUBTOTAL CONVEYANCE FACILITIES</b>										<b>\$81,493,000</b>

<b>UPPER SAN JOAQUIN RIVER BASIN STORAGE INVESTIGATION</b>	
<b>Cost Estimate</b>	
<b>Montgomery Dam and Reservoir</b>	Sheet 1 of 4
<b>Small Dam Option (crest el. 311)</b>	
Based on 1960 and 1996 cost estimates. Unit costs updated by index to 2002 . Land costs based upon current unit prices.	
<b>FIRST COST ITEMS</b>	Cost (2002 dollars)
<b>DAMS</b>	
Main Dam & Saddle Dams (Earthfill)	\$ 12,204,000
Spillway	\$ 745,000
Outlet Works	\$ 15,594,000
<b>SUBTOTAL</b>	<b>\$ 28,543,000</b>
<b>CONVEYANCE FACILITIES</b>	
Reservoir Supply Pipeline	\$ 19,233,000
Pumping Plant	\$ 35,334,000
Discharge Pipeline	\$ 20,515,000
Main Canal Pipeline	\$ 6,411,000
<b>SUBTOTAL</b>	<b>\$ 81,493,000</b>
<b>TOTAL LISTED ITEMS (rounded)</b>	<b>\$ 110,000,000</b>
<b>UNLISTED ITEMS (estimated at 15%; rounded)</b>	<b>\$ 16,500,000</b>
<b>TOTAL CONSTRUCTION ITEMS (rounded)</b>	<b>\$ 127,000,000</b>
<b>CONTINGENCIES ON CONSTRUCTION (estimated at 25%; rounded)</b>	<b>\$ 32,000,000</b>
<b>TOTAL CONSTRUCTION COST</b>	<b>\$ 159,000,000</b>
<b>MITIGATION (estimated at 5%; rounded)</b>	<b>\$ 8,000,000</b>
<b>TOTAL FIELD COSTS</b>	<b>\$ 167,000,000</b>
<b>Investigations, Design &amp; Construction Mngmt (est. 15%; rounded)</b>	<b>\$ 25,000,000</b>
<b>LAND (rounded)</b>	<b>\$ 7,000,000</b>
<b>TOTAL FIRST COST</b>	<b>\$ 199,000,000</b>

<b>Estimated First Cost</b>			<b>Sheet 2 of 4</b>						<b>25-Feb-03</b>	
<b>Montgomery Reservoir: Dam Crest Elevation 311 ft</b>										
DESCRIPTION	Quantity	Unit	USBR Index		Unit Cost Jul.60	USBR Index		Unit Cost		ITEM COST Apr.02
			Jul.60	Apr.02		Oct.96	Apr.02	Oct.96	Apr.02	
<b>I. LAND AND RIGHTS</b>										
Reservoir Rights-of-Way (4,230 Ac x 1.32 Buffer Factor)	5,584	AC							\$1,200	\$6,701,000
<b>SUBTOTAL LAND AND RIGHTS</b>										<b>\$6,701,000</b>
<b>IV. DAM AND DIKES</b>										
Diversion of Water and Unwatering Foundations	JOB	LS	43	180	\$20,000				\$83,721	\$84,000
Excavation for Dam Foundation	639,000	CY				212	237	\$3.23	\$3.61	\$2,307,000
Excavation, Earthfill, in Borrow Pits and Haul to Dam	586,000	CY	43	180	\$0.65				\$2.72	\$1,594,000
Excavation, Misc Fill, in Borrow Pits and Haul to Dam	92,000	CY	43	180	\$0.50				\$2.09	\$193,000
Excav., Sand and Gravel, in Borrow Pits and Haul to Dam	826,000	CY	43	180	\$0.70				\$2.93	\$2,420,000
Earthfill	586,000	CY	43	180	\$0.16				\$0.67	\$392,000
Miscellaneous Fill	731,000	CY	43	180	\$0.15				\$0.63	\$459,000
Sand and Gravel Fill	480,000	CY	43	180	\$0.14				\$0.59	\$281,000
Furnish and Place Riprap	109,000	CY				212	237	\$31.64	\$35.37	\$3,855,000
Furnish and Place Rock Surfacing on Downstream Slope	45,000	CY	43	180	\$2.00				\$8.37	\$377,000
Chimney blanket	346,000	CY							\$0.70	\$242,000
Total Fill	2,297,000	CY								
Grout curtain drilling	45,120	ft.							\$20.00	\$902,000
Grout	33,840	bags							\$15.00	\$508,000
<b>SUBTOTAL DAM AND DIKES</b>										<b>\$12,204,000</b>
<b>V. SPILLWAY</b>										
Excavation, All Classes, Open Cut	27,000	CY				212	237	\$3.38	\$3.78	\$102,000
Furnish and Place Riprap	1,150	CY				212	237	\$31.64	\$35.37	\$41,000
Special Compaction	570	CY	39	210	\$3.50				\$18.85	\$11,000
Pervious Backfill Around Structures	5,150	CY				212	237	\$8.17	\$9.13	\$47,000
Concrete in Inlet Structure	137	CY				212	237	\$365.00	\$408.04	\$56,000
Concrete in Conduit	208	CY				212	237	\$366.00	\$409.16	\$85,000
Concrete in Chute and Stilling Basin	835	CY				212	237	\$365.00	\$408.04	\$341,000
Concrete in 12-inch Exit Channel Lining	255	Cy				212	237	\$80.00	\$89.43	\$23,000
Concrete in 4-inch Canal Lining	205	CY				212	237	\$80.00	\$89.43	\$18,000
Rubber Waterstop , 6-inch	510	LF	39	210	\$3.50				\$18.85	\$10,000
Chain-link Fence	350	LF	39	210	\$4.00				\$21.54	\$8,000
Air Inlet Piping	1,100	LB	39	210	\$0.50				\$2.69	\$3,000
<b>SUBTOTAL SPILLWAY</b>										<b>\$745,000</b>

<b>Estimated First Cost</b>			<b>Sheet 3 of 4</b>						<b>25-Feb-03</b>	
<b>Montgomery Reservoir: Dam Crest Elevation 311 ft</b>										
DESCRIPTION	Quantity	Unit	USBR Index		Unit Cost	USBR Index		Unit Cost		ITEM COST
			Jul.60	Apr.02	Jul.60	Oct.96	Apr.02	Oct.96	Apr.02	Apr.02
<b>VI. OUTLET WORKS</b>										
Excavation, All Classes, Open Cut	286,000	CY							\$6.76	\$1,933,000
Furnish and Place Riprap	5,350	CY				212	237	\$31.64	\$35.37	\$169,000
Pervious Backfill Around Structures	23,000	CY				212	237	\$18.99	\$21.23	\$437,000
Special Compaction	3,780	CY	39	210	\$3.50				\$18.85	\$71,000
Concrete in Inlet Lining	600	CY				212	237	\$321.00	\$358.85	\$215,000
Concrete in Intake Structure	3,200	CY				212	237	\$340.00	\$380.09	\$1,216,000
Concrete in Upstream Conduit	2,730	CY				212	237	\$321.00	\$358.85	\$980,000
Concrete in Downstream Conduit	3,680	CY				212	237	\$321.00	\$358.85	\$1,321,000
Concrete in Access House	130	CY				212	237	\$340.00	\$380.09	\$49,000
Concrete in Anchor Blocks	4,600	CY				212	237	\$256.00	\$286.19	\$1,316,000
Concrete in Chute and Stilling Basin	3,100	CY				212	237	\$365.00	\$408.04	\$1,265,000
Concrete in Bridge Deck	123	CY				212	237	\$424.00	\$474.00	\$58,000
Concrete in Bridge Piers	800	CY				212	237	\$363.00	\$405.81	\$325,000
6-inch Soil Pi Drain	980	IF	37	233	\$4.20				\$26.45	\$26,000
Type "B" Rubber Waterstops	1,910	LF	39	210	\$3.50				\$18.85	\$36,000
Trashracks	225,000	LB				212	237	\$3.63	\$4.06	\$913,000
Stop-log Seats and Guides at Intake Structure	22,000	LB				212	237	\$3.63	\$4.06	\$89,000
Stop-logs at Intake Structure	50,000	LB	37	233	\$0.23				\$1.45	\$72,000
17-ft b 22.51-ft Fixed Wheel Gate	124,000	LB	37	233	\$0.70				\$4.41	\$547,000
Fixed Wheel Gate Frames and Guides	56,300	LB	37	233	\$0.50				\$3.15	\$177,000
Fixed Wheel Gate Hoist	30,000	LB	37	233	\$1.02				\$6.42	\$193,000
Fixed Wheel Gate Control	2,500	LB	37	233	\$2.15				\$13.54	\$34,000
Miscellaneous Metalwork	2,000	LB				212	237	\$3.63	\$4.06	\$8,000
Reservoir Level Gage, Floatwell, and Piping	8,000	LB	37	233	\$1.00				\$6.30	\$50,000
Steel Girder Bridge Metalwork at Intake Structure	60,000	LB	37	233	\$0.26				\$1.64	\$98,000
Chain-link Fence	1,220	LF	39	210	\$4.00				\$21.54	\$26,000
17-ft Diameter Steel Pipe and Liner	945,000	LB	37	233	\$0.35				\$2.20	\$2,083,000
9.5-ft Diameter Steel Outlet Pi (2 Total)	115,000	LB	37	233	\$0.30				\$1.89	\$217,000
75-ft b 9-ft Outlet Gates (4 Total)	440,000	LB	37	233	\$0.57				\$3.59	\$1,579,000
Outlet Gate Controls	3,500	LB	37	233	\$2.15				\$13.54	\$47,000
St to Seats and Guides at Control Structure	6,000	LB	37	233	\$0.37				\$2.33	\$14,000
Stop-logs at Control Structure	14,000	LB	37	233	\$0.23				\$1.45	\$20,000
Gravel Surfacing (4-inch)	400	CY	37	233	\$4.00				\$25.19	\$10,000
<b>SUBTOTAL OUTLET WORKS</b>										<b>\$15,594,000</b>

<b>Estimated First Cost</b>					<b>Sheet 4 of 4</b>				<b>25-Feb-03</b>	
<b>Montgomery Reservoir: Dam Crest Elevation 311 ft</b>										
DESCRIPTION	Quantity	Unit	USBR Index		Unit Cost	USBR Index		Unit Cost	Unit Cost	ITEM COST
			Jul.60	Apr.02	Jul.60	Oct.96	Apr.02	Oct.96	Apr.02	Apr.02
<b>VII. CONVEYANCE FACILITIES</b>										
Reservoir Supply Pipeline	JOB	LS	202	259	\$15,000,000				\$19,232,673	\$19,233,000
Pumping Plant	JOB	LS				215	237	\$32,054,400	\$35,334,385	\$35,334,000
Discharge Pipeline	JOB	LS	202	259	\$16,000,000				\$20,514,851	\$20,515,000
Main Canal Pipeline	JOB	LS	202	259	\$5,000,000				\$6,410,891	\$6,411,000
<b>SUBTOTAL CONVEYANCE FACILITIES</b>										<b>\$81,493,000</b>

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